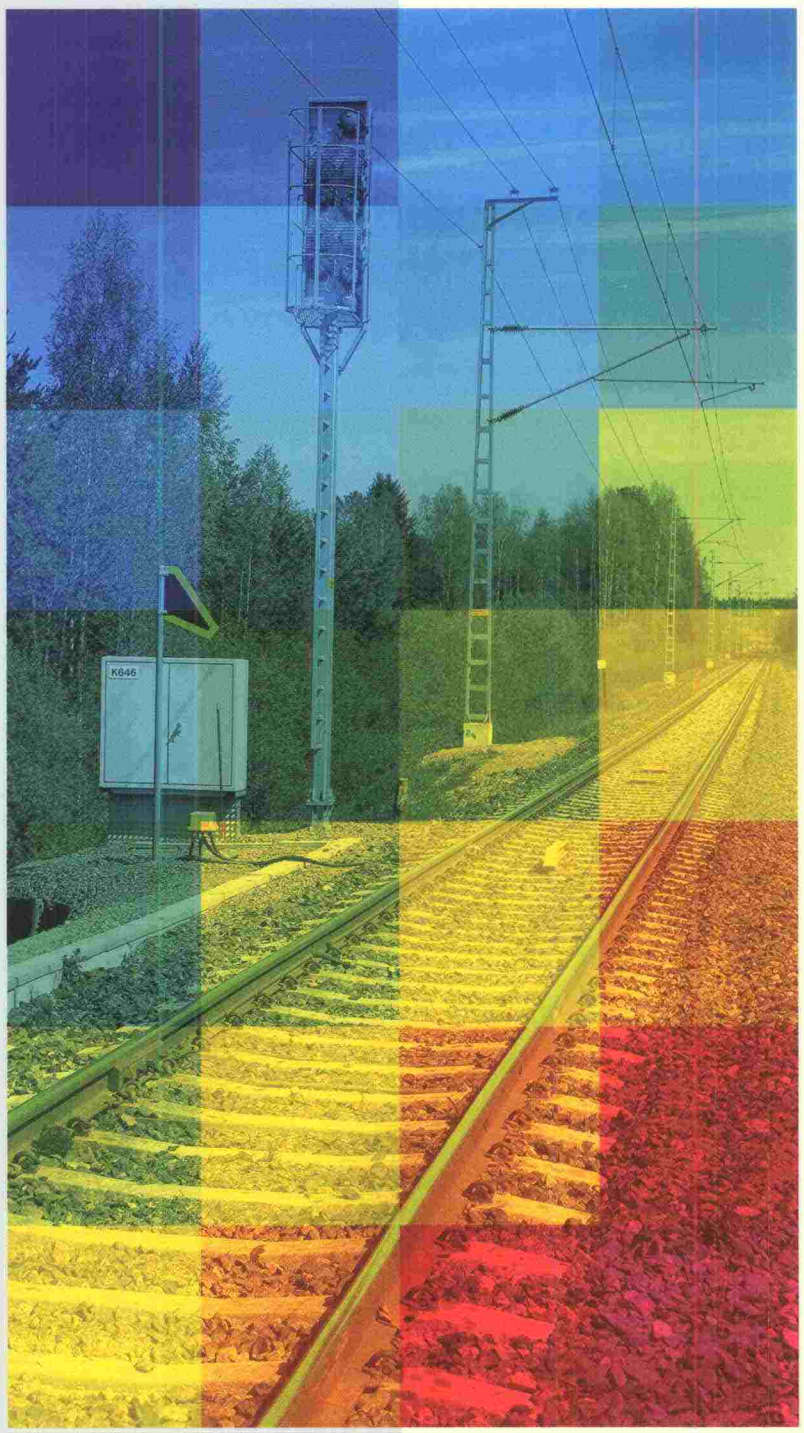
FINNISH
RAIL
ADMINISTRATION



ANNUAL REPORT 2000

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FINNISH RAIL ADMINISTRATION

BUSINESS IDEA

The Finnish Rail Administration (RHK) works to improve the operating conditions of rail traffic, enabling it to be an efficient, safe and environmentally friendly mode of transport, both in Finland and as a part of the international transport system.

RHK is in charge of maintaining and developing the rail network, is responsible for the saftey of rail traffic and provides a competitive transport network for use by railway companies.

RHK takes into account the transport needs of induystry and commerce as well as the need for public transport and operates in accordance with the principles of sustainable development. It is developing Finland's rail network for international traffic as a key link between West and East.

RHK works actively to influence issues that affect Finland's transport policy and transport infrastructure.

ORGANIZATION

31.12.2000

RAIL ADMINISTRATION BOARD 1998-2000

Mr Ossi Niemimuukko (Chairman), Chief Director, Finnish Rail Administration

Ms Rita Piirainen, Chief Engineer, Ministry of Transport and Communications

Mr Veikko Vaikkinen, Direcror, Economy and Systems Department, VR Group Ltd

Ms Maire Kaartama, Transport Economy Agent, Confederation of Finnish Industry and Employers

Mr Harri Ajomaa, Finnish Traffic Association

Ms Arja-Hannele Lilja, Chief Inspector, Finnish Rail Administration (up to 3 December 1998)

Mr Tapio Peltohaka, Planning Manager, Finnish Rail Administration (from 3 December 1998)

RAIL ADMINISTRATION BOARD 2001-2003

Mr Timo Poranen (Chairman), Managing Director, Finnish Forest Industries Federation

Ms Hannele Luukkainen, Chairman, Finnish Traffic Association

Ms Rita Piirainen, Chief Engineer, Ministry of Transport and Communications

Mr Markku Pyy, Planning Manager, Finnish Rail Administration

Mr Veikko Vaikkinen, Direcror, Economy and Systems Department, VR Group Ltd

CHIEF DIRECTOR'S REVIEW

The past year was quite significant for the rail sector. An amendment of legislation which had been in preparation in the EU for some time finally neared completion. When the Council of Ministers and the European Parliament have reached agreement on the matter, this legislation will be enacted at the national level by the member states.

Perhaps the most significant new aspect of this package is the opening of freight traffic to competition in Europe's international freight traffic network. The EU has long wanted to improve operating conditions for freight traffic and has viewed competition as one means to vitalize this sector. The Commission intends to continue liberalization and extend it later on to national traffic as well.

One of the EU's goals is to reduce the growing congestion of road traffic. Unfortunately the rail network also includes bottlenecks and it will take a lot of work to remove them, especially in countries where passenger traffic is generally given a higher priority than freight traffic. Customers have in fact increasingly complained about the quality of freight traffic.

For Finland this development should not signify a major change in the present operating model, since our connections with the rail network in other parts of the EU and related traffic are quite limited. The new EU legislation will not apply to connections to the east, in which freight volumes are substantial. Consequently the new situation is not expected to change RHK's activities over the short term. If we look farther ahead, however, RHK will have to be prepared for a situation in which the rail network is used by more than one operator.

In practice this means that RHK must have the capability to approve and ensure rail safety on the part of operators, to divide rail capacity neutrally and to collect track fees fairly. These capabilities must be developed in advance. A project which got under way at the end of 2000 is designed to take tasks resulting from competition into consideration in RHK's operational structure.

In Finland discussion concerning competition in the rail sector has not been limited to traffic. The Ministry of Transport and Communications has conducted a study regarding the expansion of contracting in track maintenance. At present almost all work involving superstructures is handled by VR-Track Ltd. The reasons for this are both historical and economic. The Finnish State Railways used to take care of this work with its own employees and equipment, and no outside supply existed as a result. Today the size of investments makes it difficult for new enterprises to enter the market.

The study conducted by the ministry shows that competition can be promoted, although this requires active efforts on the part of the buyer: competition cannot be expected to come into existence by it-

self. In this situation it is important to form an operating model which can ensure the desired benefit, the lowering of costs. It is also necessary to ensure the safety of traffic and employees in the new operating environment. Progress will most likely be made in stages and with the help of pilot projects. The benefits will be realized through more efficient operations and new operating procedures.

In summer 2000 RHK marked the end of its fifth year of operation. In addition to starting up, over the past years RHK has had to find and apply suitable operating models and set objectives and priorities.

If we compare the present situation with the early days in terms of result objectives, significant progress has been made. The condition of the rail network has clearly improved, although a lot of work remains to be done. The results of determined efforts to improve safety will only be visible over the longer term, but work is now proceeding on more fronts than perhaps ever before. All this increases confidence that rail traffic and the rail network can serve the needs of Finnish society with an even higher level of quality.

RHK has long worked to create a vision of what type of rail network Finland wants in the future and what preconditions exist to achieve this network. This work has been conducted in close cooperation with different interest groups. The Rail Network 2020 plan was brought to the completion stage at the end of last year. The purpose of this project was to collect materials for discussion and decision-making so that priorities can be set for track maintenance, raising train speed, electrification, increasing capacity and building new rail connections.

With the rail operator making huge investments in new rolling stock, surveying the future is especially important. It appears likely that the operator's wishes and RHK's possibilities will not always coincide, so in this situation discussion concerning priorities is of primary importance. I hope and believe that this discussion will be fruitful.

Helsinki, 24 February 2001

Ossi Niemimuukko

PERFORMANCE OBJECTIVES IN 2000

The performance objectives which the Ministry of Transport and Communications set for the Finnish Rail Administration in 2000 were achieved as follows (*objective in italics*):

LEVEL OF SERVICE

Service level categories

No changes will be made in the scope of the rail network.

In some cases this objective was not achieved and in some cases it was exceeded. 158 kilometres of track was shifted from service class 2 to service class 1 when it was possible to raise speeds on the Kerava–Tampere line section thanks to the completion of track renewal ahead of schedule. The objective was to shift 120 kilometres to class 1.

On the other hand the objective was not achieved on the Turku–Toijala line section. It was not possible to raise speed to the level required in service class 2 because the renewal of level crossings and the building of embankments could not be included in work programmes. The objective was to shift 130 kilometres from class 3 to class 2.

Traffic delays

Delays lasting over 5 minutes due to track maintenance will not exceed 7% of passenger trains.

Track maintenance caused considerably fewer delays lasting over 5 minutes than the previous year. Delays amounted to 3.1% of passenger trains in long-distance traffic. The objective was a maximum of 7%.

There are several reasons for positive development. Strong emphasis has been planned on the planning and control of track maintenance work. Track work has been shifted to less busy line sections. Damage to safety equipment as a result of work has declined. The lightning resistance of safety equipment has been improved considerably, although disturbances still occur from time to time and with the increase in equipment the problem will grow. In the summer train timetables were adjusted. Running times as well as the time allowed for stops and changes were extended.

Traffic restrictions

Axle weights will not be restricted. Speed restrictions will be increased and a maximum of 500 track-kilometres (13% of track-kilometres) will be under speed restrictions at the end of the year.

Restrictions on axle weights were not imposed. Speed restrictions had to be increased during the first half of the year. At the beginning of the year 426 track-kilometres were under speed restrictions. At the end of June 445 track-kilometres were under speed restrictions. It was possible to remove some restrictions late in the autumn and the figure at the end of the year was 431 track-kilometres.

Rail network condition index

The objective for the average rail network condition index in 1997-2000 is 82%. The rail network condition index is calculated on the basis of the geometric condition level in relation to track-kilometres according to maintenance class.

The larger the number of track-kilometres in each maintenance class, the larger its weight in calculating the rail network condition index. The condition index's maximum value is 100. If the condition index is 100%, the rail network has met geometric condition requirements completely. The condition index in the objective is calculated on the basis of spring measurements as a four-year sliding average. In 2000 the sliding average was 85%. The objective was 82%, which means the objective was exceeded by 3 percentage points.

IMPROVING SAFETY

Accident fatalities

No fatalities will occur in passenger traffic accidents.

No passengers died in rail accidents during the year, so the objective was achieved.

Accidents at level crossings

The number of accidents at level crossings will not exceed 40.

A total of 51 accidents occurred at level crossings during the year. The objective was a maximum of 40, so this objective was not

achieved. The rise in accidents at level crossings was exceptional compared with previous years. Also exceptional was the death of a passenger in an accident at a level crossing in Kuivaniemi. The last time this happened was in 1981. A train was derailed as a result of an accident at a level crossing between Ii and Oihava. Material damage amounted to about FIM 20 million. Such derailings are rare.

According to investigations the most common reason for accidents is that motorists have failed to notice an approaching train, even when no obstacles have been in the way. Motorists broke booms at level crossings 150 times during the year, which says something about driving culture.

Effective means have not been found to reduce the number of accidents at level crossings over the short term. Visibility at level crossings was surveyed during the year and direct measures are constantly taken to improve visibility. Efforts are also made to influence motorists' attitudes in campaigns conducted in cooperation with other organizations.

Accidents due to permanent way

The number of accidents due to permanent way will not exceed five.

There were three accidents due to track maintenance, so this objective was achieved.

ECONOMY OF INFRASTRUCTURE MANAGEMENT

Unit costs of infrastructure management products will decline by 3%.

Basic infrastructure management is a year-to-year activity whose productivity can be calculated. The amount of infrastructure management changes when a line section is shifted to another service category. Otherwise the level of infrastructure management remains unchanged. A contract is concluded annually for basic infrastructure management. This contract amounts to about FIM 400 million. In 2000 productivity requirement was 5%. Prices were estimated to rise by 3%. This objective was achieved with regard to the basic contract.

REAL ESTATE

RHK manages real estate under its control primarily by ensuring the serviceability of properties required for rail traffic. Income from real estate activities should cover maintenance costs, joint costs and depreciation on capital costs.

Income from real estate activities will exceed annual expenses for maintenance by at least 30%.

Income from RHK's real estate activities totalled FIM 55.4 million. Maintenance costs amounted to FIM 41.9 million, so income exceeded expenses for maintenance by 32.3%. The objective of 30% was exceeded. The surplus after separate expenses was FIM 13.5 million. The share of joint costs was FIM 1.3 million. FIM 12.2 million was left over to cover capital costs. Depreciation totalled FIM 14.4 million, so FIM 2.2 million of depreciation was not covered.

Real estate activities do not yield interest on invested capital. Development measures will not be able to improve the situation in the future. The surplus after separate expenses has declined since the RHK's first years. This is because RHK controlled plenty of profitable parking facilities to begin with. Holdings have shrunk each year. Real estate holdings were reduced at the beginning of 2000 by transferring them to the Ministry of Finance and the Ministry of Agriculture and Forestry and by selling some holdings to private parties. The location and condition of buildings limit possibilities to sell or lease holdings. Capital costs have fallen as holdings have shrunk, but income has also been lost so the result has not improved essentially.

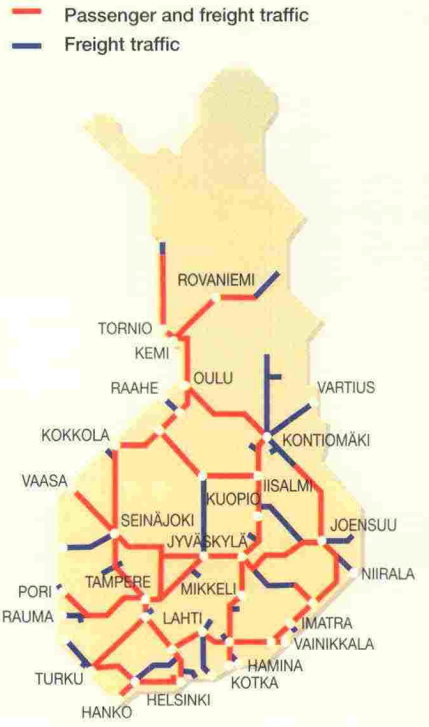
OTHER OBJECTIVES

The development of indicators will continue so that results can be utilized in preparing the budget proposal for 2001. In this connection the setting of safety objectives will also be improved, paying attention to dangerous situations.

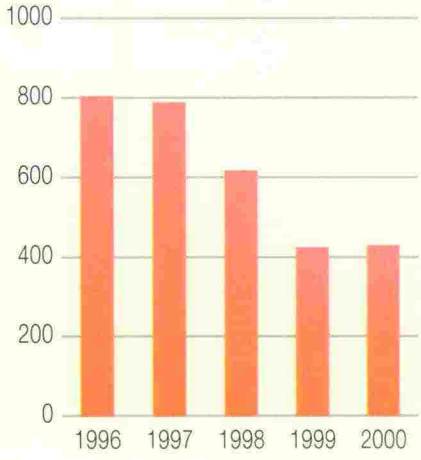
New indicators were not available to set result objectives for 2001. They should be available when the Ministry of Transport and Communications sets result objectives for 2002.

Rail traffic network

31.12.2000



Speed restrictions, km



OPERATING ENVIRONMENT

The point of departure in maintaining and developing the rail network is national and international traffic requirements. Infrastructure management creates the preconditions for safe, efficient and competitive rail services. Rail traffic is operated by VR Limited.

Slight growth in freight traffic

The railways serve as a basic carrier for industry in Finland. The forest, metal and engineering, and chemical industries' raw materials and products account for the largest parts of freight. At present around one-fourth of Finland's freight traffic is by rail, while the share in the EU averages only 15%.

In 2000 the volume of rail freight totalled 40.5 million tonnes, including 16.5 tonnes in international traffic. The volume of rail freight rose by 1.5% compared with the previous year.

Eastern traffic fell by 1.5% between Finland and Russia and amounted to 12.7 million tonnes. Imports of roundwood accounted for about half of the total. Transit traffic via Finland amounted to 2.7 million tonnes. Western traffic rose slightly and totalled just over 1 million tonnes. Most of this traffic was on rail-ferries to Germany and Sweden.

International freight traffic opening to competition

The European Parliament and the Council of Ministers decided on three directive proposals in November 2000. The purpose of this package is to stimulate Europe's railways by creating favourable conditions for the development of a competitive rail system which meets customers' needs. The directives will come into force in 2001.

The decision defines the Trans-European Rail Freight Network (TERFN), which includes key lines handling freight services and the right to use major terminals and ports. In Finland the TERFN network is the same as the present TEN network.

According to the decision, operating licences to provide freight services will be valid throughout the EU. All rail companies can thus take advantage of possibilities to enter new markets on equal terms.

Finnish legislation is currently being brought in line with the directive. With regard to the opening of competition, the Ministry of Transport and Communications has taken the position that Finland will proceed according to the directive and only international freight traffic will be opened to competition.

Increase in commuter journeys

Rail traffic accounts for about 5% of passenger traffic in Finland and about 60% of public transport journeys over 75 km in length.

Passenger traffic amounted to 54.8 million journeys, up about 3% over the previous year. Commuter traffic increased by 4%, while long-distance traffic fell by almost 1%. Commuter traffic increased on all routes. Long-distance traffic increased clearly between Helsinki and Turku. Services were also increased on this line.

InterCity services were expanded during the year and account for a steadily growing share of traffic. Nearly one-third of services between Helsinki and Turku are handled by high-speed Pendolino trains. In 2001 Pendolino services will expand with the addition of new units.

Traffic between Finland and Russia increased by 17% and exceeded 200,000 journeys.

First travel centres in use

Finland's first travel centre was opened in Seinäjoki in June and a second one was opened in Lappeenranta in December. Travel centre projects involve cooperation

between the Ministry of Transport and Communications, cities, VR, Matkahuolto and RHK.

The idea is to concentrate rail, bus and taxi services in the same place and create a smooth chain for intermodal transport.

The Ministry of Transport and Communications wants to create a high-standard network of public transport stations with 22 travel centres by 2005.

Decision on division of tasks

In 2000 the division of responsibility for infrastructure management between RHK and VR-Group Ltd was decided. The decision was based on a survey conducted by a joint working group in 1999.

A key change concerns the radio network used in traffic control. According to the decision, RHK will be responsible for the digital GSM-R network which will be built in the coming years, whereas VR is responsible for the present analog line radio network. Responsibility for passenger information systems at stations and hot-axle detectors will also be shifted to RHK.

The principles for dividing responsibility for loading, depot and shop tracks were specified and responsibility for track maintenance was shifted from RHK to VR in 51 places. The most significant of these is the Ilmala yard in Helsinki.

Tendering for track work

RHK's goal is to expand competitive tendering for track work. A Ministry of Transport and Communications report on this matter was completed during the year. The report analysed different models for putting track construction and maintenance work out to tender, along with their effects.

Three different models were described:

- The customer-supplier model mainly uses a contracting agreement in which the main contractor is VR-Track Ltd.
- The management-tendering model can use a project management service agreement or billing-based project management contracting.
- The comprehensive tendering model can use different types of agreements such as overall contracting and technical contracting.

According to the report, different models should be used side by side in infrastructure management. Project management is of key importance in construction, while emphasis is placed on process management in maintenance work.

RHK's experience of tendering has mainly been good, since costs have declined, work and traffic have been coordinated successfully, quality has improved and information on costs and prices has increased.

RHK considers it best to expand tendering for track work gradually through pilot projects. The most important follow-up measure is to create a tendering strategy.

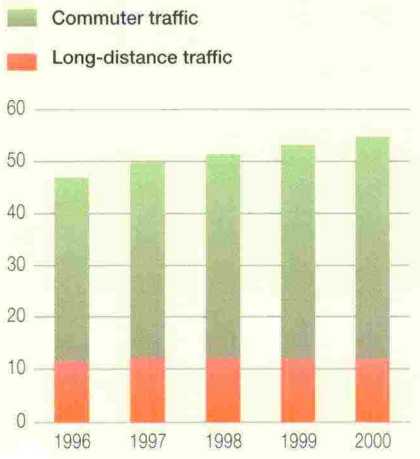
Development of European rail network

RHK is preparing to act as the notified body in charge of monitoring compliance with the EU's high-speed rail network directive in Finland. The directive on the conventional rail network will have even greater significance. The preparation of this directive should be completed in spring 2001. Technical harmonization promotes the creation of a single market for rail equipment.

Fourteen high-priority transport projects are under way in the EU. Important rail projects for Finland are the Nordic Triangle, the rail corridor from Helsinki to St Petersburg and Moscow and the Barents Euro-arctic transport area.

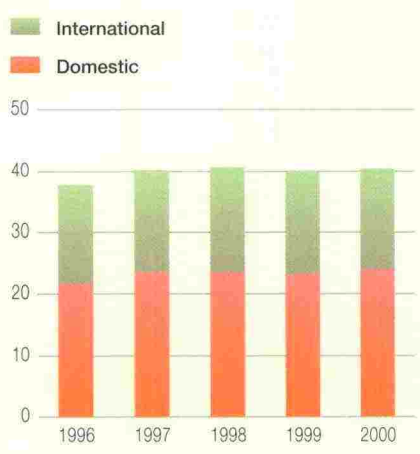
In order to develop rail links between Finland and Sweden, efforts have been made to find automatic gauge changing equipment so that border crossings can proceed without the need for transshipment. A direct connection from Finland to Narvik, for example, will increase transport possibilities in the Barents area.

Passenger volume, million journeys

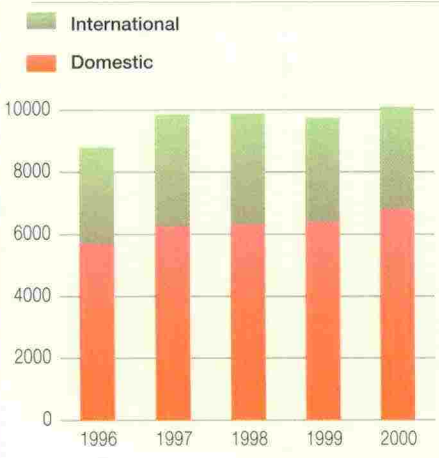


Passenger-km, million

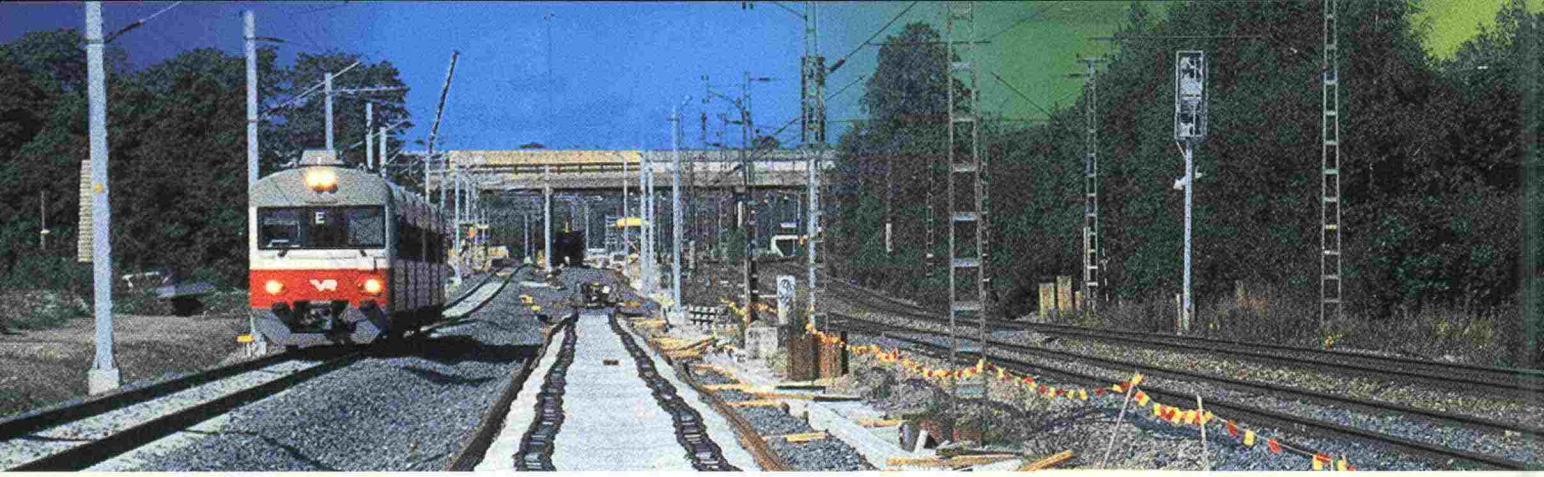
Freight volume, million tonnes



Tonne-km, million



Source: VR



RAIL NETWORK STRATEGY

The need for long-term planning is especially great in the rail sector, where lines and rolling stock have a long service life. Investment decisions affect operating conditions for decades to come. RHK's task is to provide operators a competitive rail network which meets the needs of the future.

Rail Network 2020 plan

Preparation of a long-term plan for infrastructure management continued during the year. The Rail Network 2020 plan examines objectives, development needs and measures in a comprehensive way. It also investigates the effects of different measures and how measures can be implemented with different levels of financing. The purpose of the plan is to support RHK's operating strategy as well as short-term operational and financial planning.

The preparation of the Rail Network 2020 plan was a multi-stage, interactive process. Basic methods of programme preparation and evaluation were followed in planning. Key interest groups participated in the preparation of the plan in joint seminars and regional meetings. For example, changes in the operating environment were evaluated in cooperation with the Ministry of Transport and Communications and the Finnish National Road Administration.

Evaluation of effects in interim report

An interim report on the plan was published in March 2000. This report focused on the effects of development options. On the basis of the evaluation of the operating environment and objectives for the transport system, objectives and policies for infrastructure management were specified. Three options for the rail network were then defined and compared. The different options placed emphasis on passenger traffic, freight traffic and a combination of the two. Similarities and differences between the effects of these options were evaluated.

Each option was also compared with the objectives set for the transport system in terms of economic, regional, social, environmental and safety effects.

The conclusion was that the implementation of projects promoting both passenger and freight traffic is socio-economically feasible. Most infrastructure management measures and investments serve both types of traffic. The development of rail traffic will also have positive effects on the regional structure as well as the environment and safety.

Two different levels of financing

The key results of planning are presented in the Rail Network 2020 plan, which will be published in spring 2001. The plan presents RHK's vision of how the rail network should be maintained and developed over the next twenty years. The plan examines development measures needed to meet objectives for the transport system.

The advantages and disadvantages of measures and projects, as indicated by the evaluation of effects, and how they meet objectives for transport policy and the transport system were also taken into consideration in preparing the plan. The examination is based on two levels of financing, which show what effects additional financing or a reduction of financing will have.

Investments will affect competitiveness

A key objective in developing the rail network is to promote the competitiveness of rail traffic throughout the nation. Traffic needs and strategies concerning the supply of trains and rolling stock were studied in cooperation with VR Limited so that investments will be compatible and can be made available to customers as soon as possible. Development proposals for long-distance passenger traffic and commuter traffic in the Helsinki region were discussed

with municipalities and others. Development prospects for freight traffic were likewise investigated with industry.

A high level of service for the transport system requires that the rail network be kept in good condition so that rail traffic can operate competitively and efficiently. This can be achieved with track maintenance, replacement investments and socio-economically feasible development projects.

The plan notes that

- a direct line from Kerava to Lahti will improve operating conditions for rail traffic throughout the country,
- the ageing of the rail network requires the renewal of lines and yards,
- raising the axle weight to 25 tonnes will allow efficient industrial carryings,
- further electrification will increase the efficiency of rail traffic,
- sufficient rail capacity is a precondition for increasing rail traffic,
- raising passenger train speeds will shorten travel times, improve the efficiency of rail traffic and have a positive effect on the regional structure,
- level crossings will be eliminated on routes with high-speed passenger traffic or transports of hazardous substances.

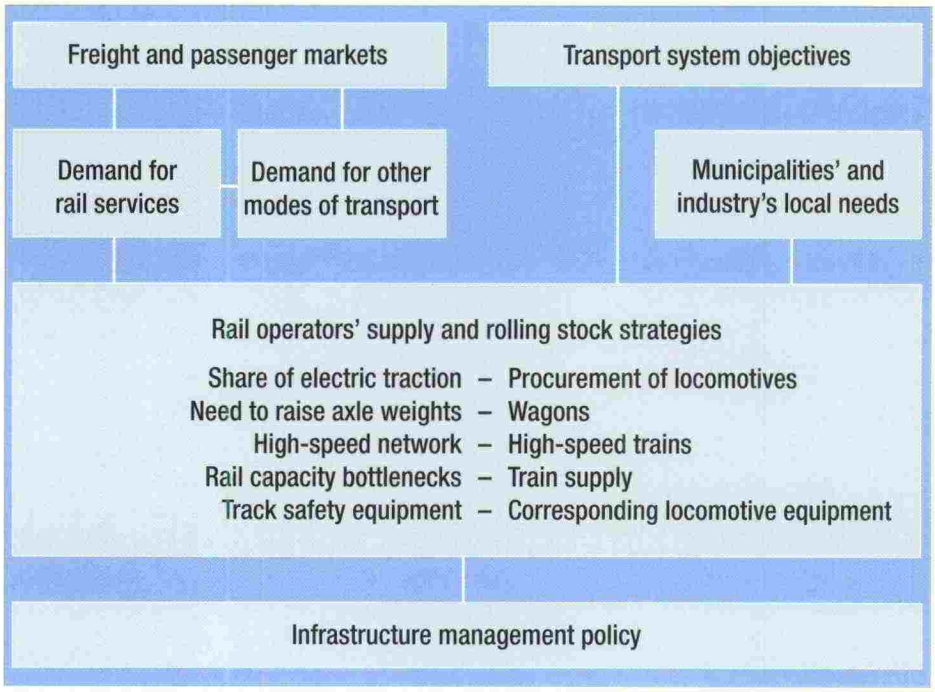
The level of financing will have a decisive effect on the implementation of development projects and thus concrete improvements in the level of service.

Implementation of the plan

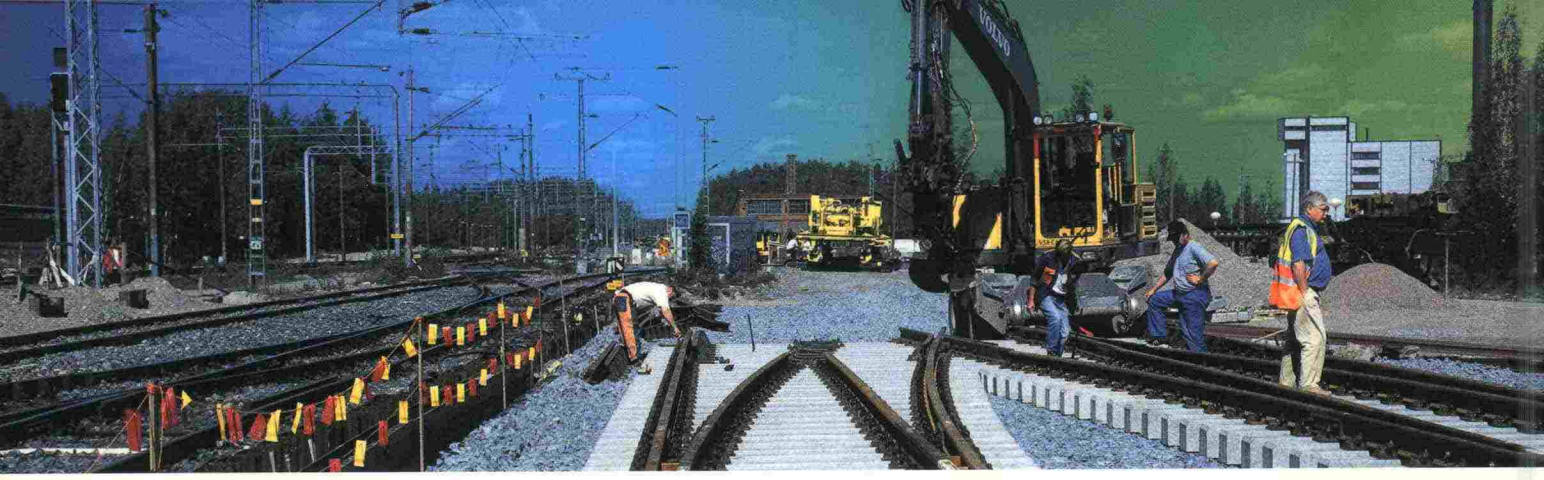
The Rail Network 2020 plan shows that developing the rail network will have many positive effects for society and the transport system. The benefits will be all the greater, the faster development projects can be carried out. This in turn depends on the level of financing.

Interest groups will be asked to issue statements on the plan. Implementing the plan will require the preparation and making of many different decisions. The process will also include monitoring and follow-up studies.

Factors affecting infrastructure management



Finland's international railway links



TRACK RENEWAL

Track renewal proceeded well during the year. To give some idea of the scope of work, around 550,000 wooden sleepers were replaced with concrete sleepers in different parts of the country. This corresponds to nearly 330 kilometres of track. Rails were replaced on over 100 kilometres of track and about 140 new switches were installed.

Emphasis has been placed on track renewal for several years. RHK's primary goal is to upgrade existing lines to meet the needs of passenger and freight traffic. As a result the length of track under speed restrictions has fallen sharply since the mid-1990s. At the end of 2000 there were speed restrictions on 431 kilometres of track.

Planning important

Most track renewal projects are performed on lines which are kept open to traffic. This requires the careful planning and scheduling of work in order to minimize traffic disruptions. More effective planning and monitoring substantially improved the flow of traffic and punctuality during the year.

In some cases interruptions in rail services have been arranged and normal rail traffic has been handled by other means. This has made it possible to complete work more effectively. Such a procedure was followed on line sections between Kouvola and Pieksämäki and between Oulu and Tornio in 2000.

Work under way on several line sections

Track renewal continued on the Helsinki-Tampere line section, which is the busiest in the nation. Renewal of this line section is the biggest track renewal project currently under way and involves significant development investments.

A large part of track renewal was completed on the line section between Kouvola and Pieksämäki, along with the renewal of several yards. The goal of this project, which will be completed in 2004, is to improve rail safety, to develop the preconditions for freight traffic and to ensure the line section's capacity.

Superstructures were also renewed on the Seinäjoki–Vaasa, Tampere–Orivesi, Luumäki–Joensuu, Imatra–national border, Kouvola–Kotka, Kuopio–Iisalmi, Pyhäsalmi–Ylivieska and Oulu–Tornio line sections.

Yards renewed and improved

The renewal of yards is an important part of improving the efficiency of the rail network. Yard renewal was completed in Toijala and proceeded in Tampere, among others. The passenger yard in Tampere will be almost completely renewed, allowing improvements in the service level and increased traffic. The project is scheduled for completion in 2002.

Renewal of the yard and station area in Kerava was completed and construction got fully under way in cooperation with the city of Kerava. This project will substantially improve station access and make it easier for passengers to change platforms. RHK will also replace all the rails in the Kerava yard in the next few years.

Kyrönsalmi bridge renewed

The Kyrönsalmi turning railway bridge, which dates from 1908, was renewed in Savonlinna. This project involved replacing the old mechanical turning system with a remote-controlled system. The bridge was also sand-blasted and painted.

The turning part of the bridge, which weighs over 70 tonnes, was removed and transported by water to the contractor's plant for surface treatment. This ensured that waste from sand-blasting would not pollute waterways. During the project special arrangements were made for rail traffic

Rail-grinding

One important aspect of track maintenance is rail-grinding, which reduces track maintenance costs, improves running characteristics and reduces noise. Last year rails were ground over a distance of 350 kilometres mainly in south-eastern Finland.

RHK has ordered rail-grinding work from a Swiss company on the basis of international tenders.

Consultants used in projects

Good results have been obtained with the new operating model used in the construction of the urban line from Helsinki to Leppävaara, which makes use of consultants' services. The model was applied in track renewal between Kouvola and Pieksämäki, line electrification and related track work in northern Finland, superstructure work between Tampere and Jyväskylä, the covering of platforms at the central station in Helsinki and certain yard projects.

Increased efficiency through competition

RHK has concluded most of its contracting agreements with VR-Track Ltd, which has in turn invited tenders from subcontractors. The goal, however, is to gradually increase competition among contractors in order to improve efficiency, raise productivity and make better use of funds, according to the performance objectives set for RHK by the Ministry of Transport and Communications. EU regulations also require the opening of procurements to competition.

RHK has invited tenders for safety equipment and electrification work for a number of years. RHK also purchases key track materials such as rails, switches, and concrete and wooden sleepers on the basis of tenders.

Special track work has been put out to tender mainly in the case of superstructure work and bridges. In construction and special maintenance work, RHK has specified jobs and charges have been tied to scheduled work results. Track maintenance work has been ordered on a fixed-price basis from VR-Track Ltd.

Improvement in real estate holdings

A new rail office building was completed in Oulu, improving the efficiency of freight services in northern Finland. Traffic controllers' working conditions were improved by renewing traffic control facilities in Tampere, Kouvola and Riihimäki. A programme to renew electrical feeder stations and equipment facilities began in southern Finland.

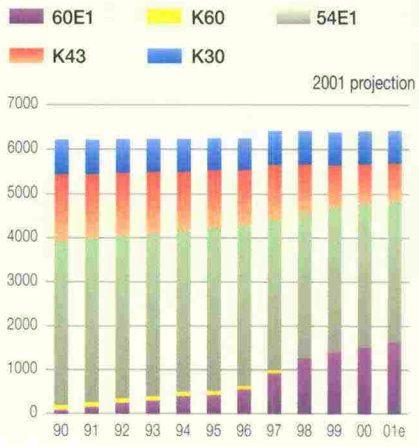
Special attention was focused on work safety in platform areas. The Technical Research Centre of Finland prepared safety guidelines for maintenance work in platform areas and these were applied in new maintenance agreements. Station safety was improved by installing surveillance cameras at the Järvenpää, Rekola and Korso stations, in cooperation with the municipalities.

Finland's first travel centre was opened in Seinäjoki in June. RHK has also participated in travel centre projects in Tampere, Jyväskylä, Vaasa, Lappeenranta, Lahti, Kouvola and Oulu, among others.

New training system

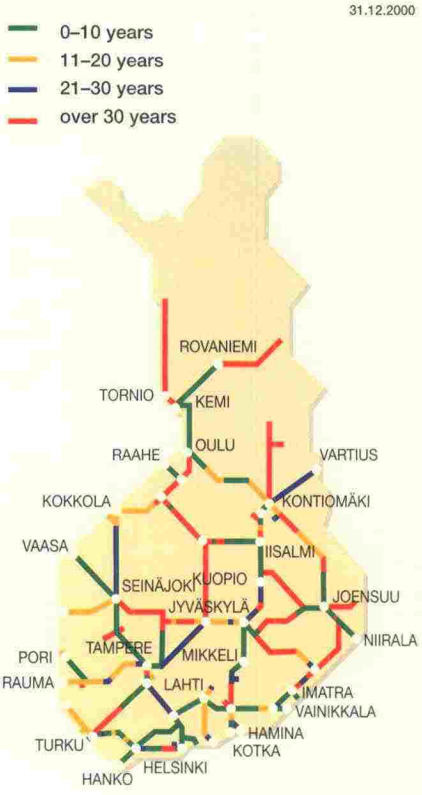
New qualifications for track workers were published during the year. A training system based on the new qualifications will be in full operation from the beginning of 2001. The VR Training Centre is responsible for instruction.

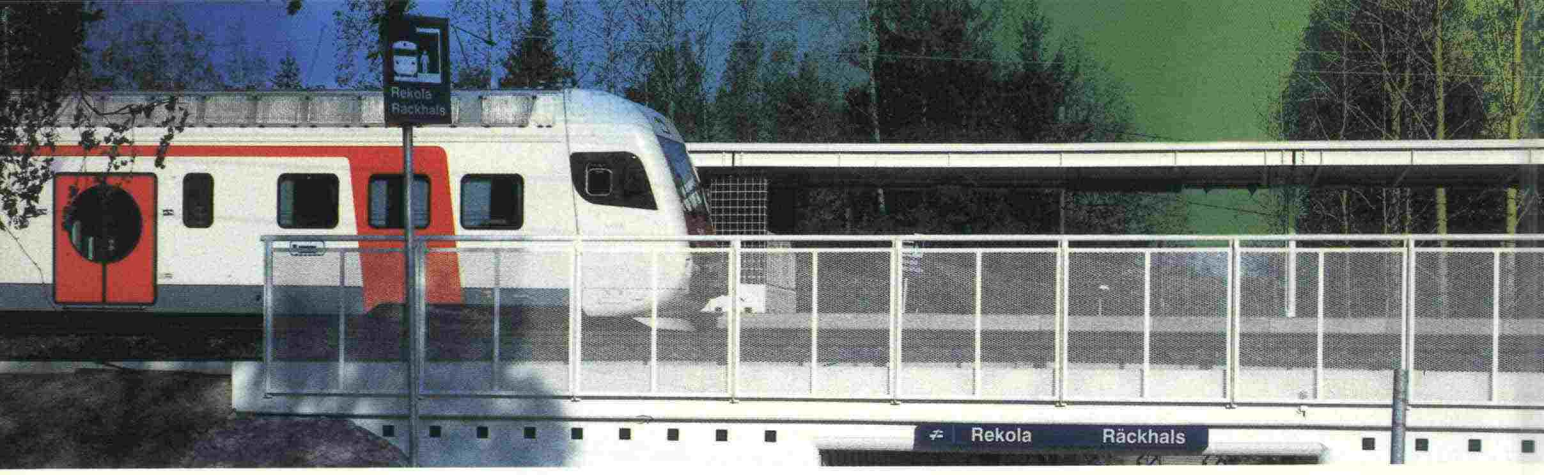
Types of rails on main lines, track-km



Installed sleepers, million

Age of superstructures in the rail network





DEVELOPMENT

In addition to replacement investments, the competitiveness of rail transport is also being improved through a number of major development projects. The focus is on increasing rail capacity, expanding electrification and improving safety.

Good progress on urban line

The most significant development project in the Helsinki region, the construction of the Helsinki–Huopalahti–Leppävaara urban line, proceeded according to plan during the year. The focus shifted from earthwork to superstructure, electrification and safety equipment work. New platforms were completed at the central station in Helsinki, along with a new pedestrian bridge.

The project includes two additional tracks, the renewal of existing tracks and station and street arrangements to accommodate feeder traffic. The additional tracks will make it possible to separate long-distance and commuter trains, allowing a substantial increase in the number of services.

The new urban line is a joint project undertaken by RHK and the cities of Helsinki and Espoo and is part of the development of the public transport system in the Helsinki region. RHK is responsible for building tracks, while Helsinki and Espoo are responsible for station, street and access arrangements. The urban line is scheduled for completion in August 2001

Rekola-Korso passing track completed

The extension of the Helsinki–Tikkurila urban line to Kerava is also part of the development of the public transport system in the Helsinki region. This project will be completed in stages. The first stage, the construction of a passing track between Rekola and Korso, was completed during the year in connection with renewal of the Helsinki-Tampere line.

A proposal for a cooperation document between the state and the municipalities in the Helsinki region was completed in the spring. This proposal includes the extension of the Helsinki–Tikkurila urban line to Kerava. On the basis of the document a revision of the master plan was started, along with an evaluation of the project for cost negotiations between the state and municipalities.

Upgrading of the Helsinki-Tampere line

Renewal of the Helsinki–Tampere line will make it possible to improve the level of service. The line's geometry will be designed for a speed of 160 km/h, allowing tilting-body trains to travel as fast as 200 km/h. In freight traffic the maximum axle weight will be increased to 25 tonnes. Traffic safety will be improved by eliminating level crossings and traffic capacity will be increased by building a third track between Sääksjärvi and Tampere. The track will improve access to the Perkiö freight yard.

The service level at the stations on the Helsinki-Tampere line is being upgraded by raising and covering platforms, improving passenger information and developing access arrangements. Renewal of the Helsinki–Tampere line is scheduled for completion in 2003.

Turku-Toijala line section electrified

Electrification of the Turku–Toijala line section was completed and regular electrified services began on this line in June. Superstructures and yards were also renewed on the Turku–Toijala line section, and some level crossings were eliminated. New safety equipment and an automatic train protection system were likewise installed.

Further electrification in northern Finland

After the electrification of the Toijala–Turku line section, the focus of electrification shifted to northern Finland. First in line is the Tuomioja–Raahe line section. Work began on this freight line in 2000 and is scheduled for completion in 2001. The Rautaruukki industrial line in Raahe will be electrified, which will also serve port traffic. Next in line is the Oulu–Rovaniemi line section, which will be electrified in 2001–2004.

A new type of 2 x 25 kV electrical feed system will be used for the first time in the electrification of lines in northern Finland. The new system will allow feeder stations to be spaced farther apart, which will increase cost-effectiveness.

RHK has ordered electrification work from Sähköradat Oy on the basis of tenders. Agreement has also been reached with this company on the conditions for the electrification of the Oulu–Kontiomäki–Iisalmi/Vartius line sections. These lines sections will be electrified if Parliament gives the go-ahead and appropriates funds.

According to a survey which RHK conducted in 1998, further electrification of the rail network is socio-economically feasible and will improve preconditions for freight and passenger traffic. It is also a significant environmental investment.

Financing of direct line under study

Questions regarding the financing of the direct line from Kerava to Lahti came under discussion late in the year. The Ministry of Transport and Communications appointed a working group to study how traditional state financing can be supplemented or replaced so that the project can begin in 2003.

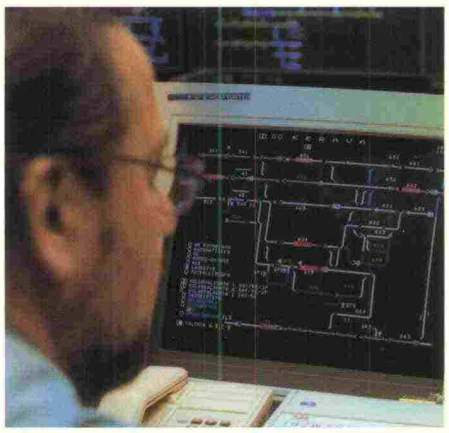
The direct line would provide additional capacity for eastern traffic and substantially shorten journeys from Helsinki to the east. It would also reduce the load on the main line from Helsinki to the north and thus provide an opportunity to develop rail traffic on this line.

Covering of platforms in Helsinki

The covering of platforms at the central station in Helsinki got under way at the end of the year. RHK has ordered the covering of three central platform and two side platforms. This project is scheduled for completion in August 2001. Covered platforms will improve the level of service and platform efficiency.

The project is exceptionally demanding, since passengers' safety, work safety and traffic management require plenty of special arrangements.

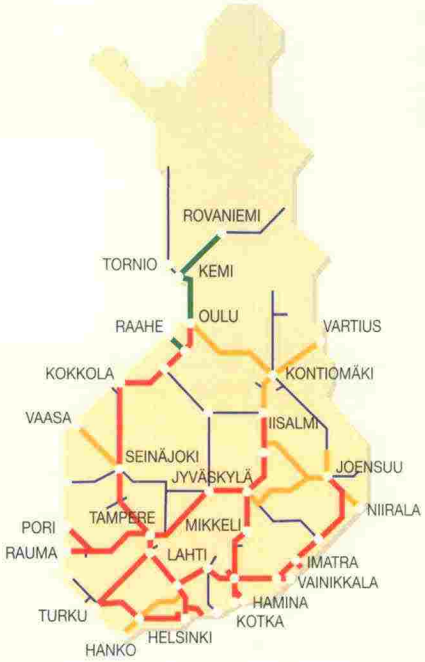
A subway under the platforms at the central station in Helsinki was placed in use in the spring, improving connections. This project was completed in cooperation with the city of Helsinki and VR-Group Ltd.



Electrification of the rail network

31.12.2000

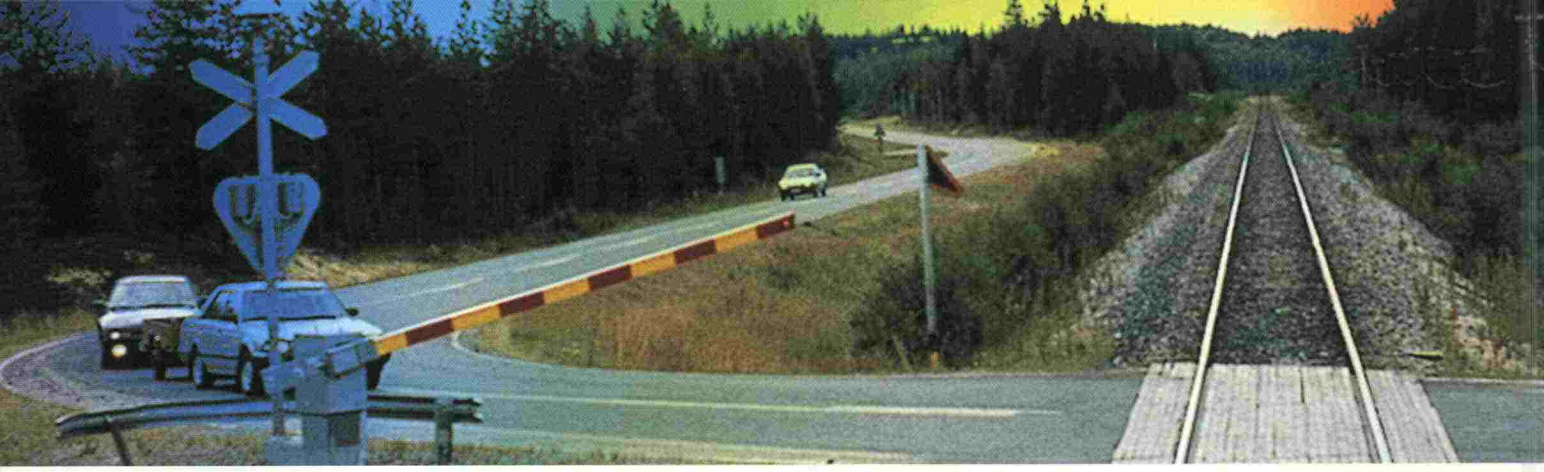
- Electrified
- Under construction
- Further electrification studied



Construction of automatic train protection equipment

31.12.2000

- Completed in 2000
- Scheduled for completion in 2001
- Scheduled for completion by the end of 2005
- Spot protection of yard approaches



SAFETY

No fatalities occurred in passenger traffic accidents. However, a total of 51 accidents occurred at level crossings and caused the deaths of 10 persons, including one train passenger. This type of fatality is extremely rare. Also exception was the derailing of a train as a result of an accident at a level crossing.

Two people were injured slightly in a collision which occurred during track work. The Accident Investigation Board, which is subordinate to the Ministry of the Interior, has conducted enquiries to determine the causes of these accidents.

Raising the level of safety

RHK's goal is to raise rail safety in Finland from an average European level to a top international level by 2002. Work in this area continued during the year.

The most important means to achieve this goal are to develop safety management and control and to improve safety technology. RHK also participates in international and especially Nordic development work aimed at improving rail safety.

An important part of safety work is research, in which RHK uses the assistance of outside experts. Last year the Technical Research Centre of Finland conducted a follow-up of a survey of rail traffic risks which was completed in 1999. The goal is to investigate concrete means to eliminate risks.

Concern over safety at level crossings

Attention was also focused on safety at level crossings during the year. The Technical Research Centre of Finland conducted a survey of level crossings on several line sections and proposed measures to improve safety. RHK also participated in a working group which was set up by the Ministry of Transport and Communications to prepare a programme to eliminate level crossings and find new ways to improve safety.

Measured continued to eliminate or protect level crossings. Last year 36 level crossings were eliminated.

Expansion of automatic train protection

Automatic train protection was expanded significantly with the inclusion of the Ylivieska–Oulu line section in the ATP system. This means that automatic train protection now covers the main line from Helsinki to Oulu with the exception of the yards in Kerava, Tampere and Kokkola, where work will be completed in 2001–2002.

Lines with automatic train protection totalled 1,682 kilometres at the end of 2000. During the year automatic train protection was installed on 502 kilometres of line, including the line sections Pasila-Kerava, Toijala–Turku, Orivesi–Jyväskylä and Kokkola–Ylivieska as well as Ylivieska–Oulu.

RHK's goal is to equip the nation's most important lines with automatic train protection by the end of 2001 and the entire passenger traffic network by the end of 2005.

The automatic train protection system ensures that trains comply with speed restrictions and signals. If a train exceeds the speed limit, the system warns the driver and applies brakes if necessary. RHK is responsible for installing track equipment for the ATP system, while the owner is responsible for installing equipment in locomotives.

Train speed and punctuality

In order to ensure safety, the speed limit was lowered from 140 km/h to 120 km/h on line sections which do not have automatic train protection and to 80 km/h if existing automatic train protection is out of operation for some reason. These limits came into effect during the timetable period beginning in June 2000, according to a decision made by RHK.

Special attention was also paid to punctuality as a factor influencing rail safety. Development work in this area was conducted in cooperation with VR Limited. Punctuality improved considerably as a result of measures.

Development of the advance notification system continued during the year. This system is intended to inform drivers and other people of exceptional conditions such as track work, track changes and speed limits.

The development of traffic controllers' working conditions also continued in 2000. The goal is to design ergonomic facilities and install them throughout the rail network. The first new facilities were placed in trial use in Tampere.

New communication system under construction

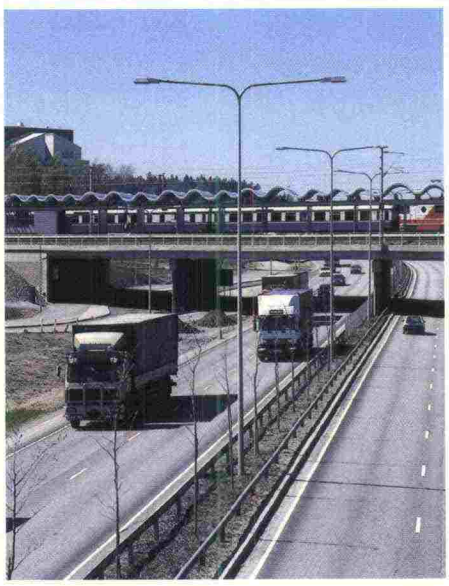
A decision to renew the national line radio system was made during the year. The radio system is used for communication between traffic controllers and train drivers. The new system is scheduled for completion in 2006.

The new radio system will be based on the European GSM-R standard. The present line radio, which is based on 1970s technology, is analog and cannot be expanded to meet the needs of the future.

The GSM-R system will allow the transfer of safety information as well as voice. The new network will also allow conference calls, with messages going to the right people and not disturbing others.

Safety work in schools

During the year RHK, VR, the police and the Central Organization for Traffic Safety in Finland continued a joint information campaign aimed at educating school pupils on rules regarding access to railways. The campaign is considered important and is an established part of safety and education work.

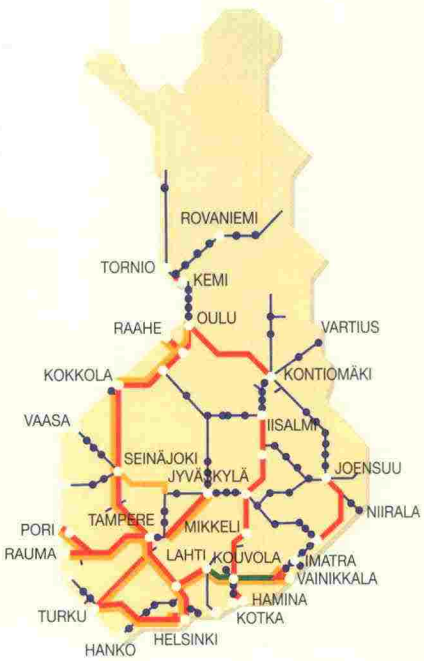


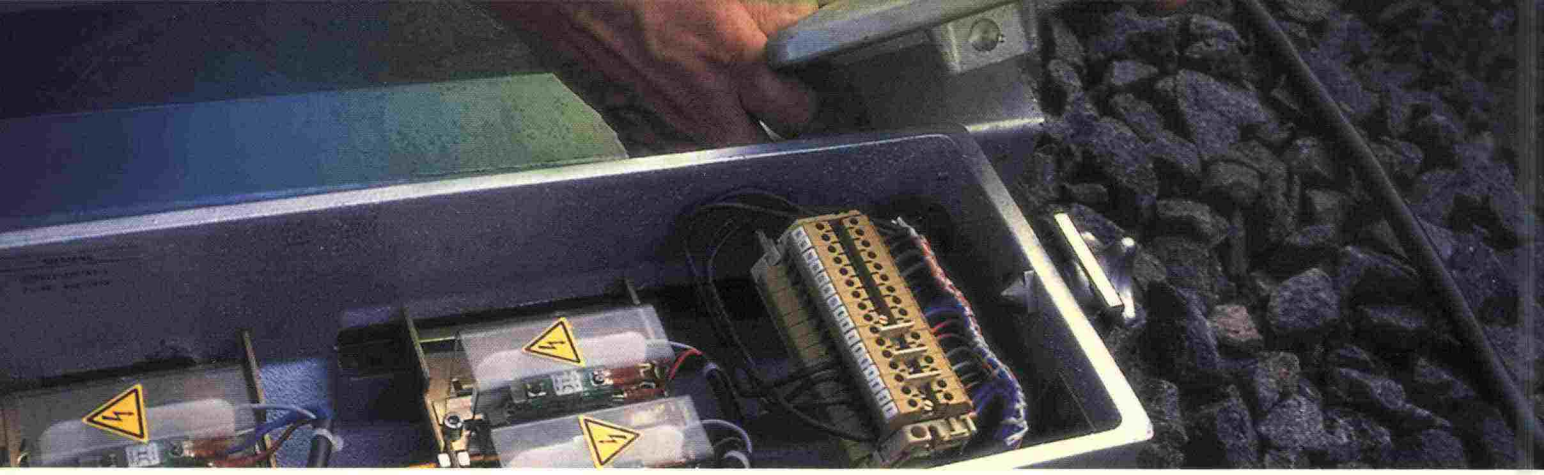
Total number of level crossings 1960-2000

Safety equipment systems

31.12.1999

- Blocking and remote control
- Blocking
- Automatic train protection
- Individual safety equipment





TECHNOLOGY

Technical matters are an essential part of infrastructure management and rail safety.

The basic compilation of technical standards was completed at the end of 2000. In the future the focus will shift to updating standards and ensuring compliance with the safety management system. International work in this area has increased and the harmonizing of European standards has gained greater significance.

Study on raising axle weights

The development of technology helps raise the level and capacity of the rail network.

The most significant research topic in 2000 concerned possibilities to raise axle weights to 25 and 30 tonnes. A final report on this subject was completed at the beginning of 2001. Another topic concerned technology for economical low-traffic lines and related cost calculations.

In February RHK arranged a seminar concerning the development of rail technology in cooperation with the Helsinki University of Technology.

Record number of type approvals

Type approvals are issued for rolling stock as well as track equipment and systems. In the case of track equipment the goal is to have several type approved solutions from which the best models can be selected on commercial grounds.

A record 25 type approvals were granted for rolling stock in 2000. Numerous passenger wagons and changes in passenger wagons were approved. Often type approvals are long-term projects which include tens of different tests. After type approval, licences are issued for rolling stock. The most extensive project in 2000 was the approval of the new Sm4 electric commuter train.

During the year nine type approvals were granted for track, electrical and safety equipment. Type approval was granted for new electric switching equipment, the Fastclip rail fastening system and electric surge protectors, among other things.

Development of control systems

RHK controls operators' activities on the rail network with the help of the safety management system. Provisions have also been made for the advent of additional operators.

The safety management system monitors train movements, switching and fleet maintenance. The system also covers traffic control and the operation of machinery involved in track construction and maintenance. Control is based on audits of operators' quality systems as well as spot checks, which continued during the year.

RHK placed in use a system for inspecting rolling stock which largely corresponds to the system for road vehicles. The system will be gradually expanded in 2001 to cover all rolling stock by the end of the year.

Guideline on private tracks

A publication on industrial and port lines was completed during the year. The publication contains guidelines for the construction and maintenance of private tracks. Most rail freight traffic uses private tracks at some point. These tracks are not under RHK's control, but RHK grants permits and concludes agreements for connections.

Numerous private track agreements were renewed during the year. A large agreement package was also negotiated for VR-Group Ltd's private tracks. This was related to the new division of responsibilities between RHK and VR-Group Ltd.

ENVIRONMENT

Key environmental matters in infrastructure management and rail traffic are energy consumption, the use of materials, emissions to air and soil, noise and vibration.

Analysis of environmental impacts

Environmental impacts were analysed during the year in connection with the Rail Network 2020 plan. The analysis was conducted according to guidelines issued by the Finnish Environment Institute.

At the project level environmental impacts were analysed for the Vuosaari port line and the proposed Marja line via the Helsinki airport.

Road connections to the Vuosaari port have been planned in cooperation with the Finnish National Road Administration. Rail and road lines have been brought closer and made to fit in better with their surroundings. Most of the rail line will be located in a tunnel.

RHK took part as an expert in general planning for the Marja line in the city of Vantaa as well as the analysis of environmental impacts.

RHK's emphasis on environment matters is visible in the case of the Helsinki-Huopalahti–Leppävaara urban line, where special attention has been paid to stations' efficiency and appearance. The construction of noise barriers is under way together with the cities of Helsinki and Espoo.

Improved information on ground water

Data concerning ground water areas and water catchments within a 1-kilometre radius of lines was fed into RHK's information system in spring 2000.

In 2000 programmes were prepared to monitor ground water at the Kouvola, Riihimäki, Sköldvik, Hamina, Vainikkala and Niirala yards. This work includes follow-ups as well as new monitoring sites.

Cleaning of land areas

Soil at old fueling points was cleaned in cooperation with VR Limited and VR-Track Ltd. The most significant clean-ups in 2000 included the fueling points at the Karjaa and Kotka yards. Contaminated soil was treated with the help of vapor extraction in Voikoski. The composting of soil removed after the 1999 oil spill in Vainikkala continued.

Survey of noise level

A survey of the noise level on the entire rail network continued in 2000. A more detailed study of noise from rail traffic in the Helsinki region is being conducted in cooperation with local authorities.

A plan concerning noise barriers on the Rekola–Korso passing track was prepared. Structural drawings for noise barriers will be revised and the construction of barriers will begin in 2001. In connection with line straightening in Lempäälä, noise measurements were also made and plans were made for noise barriers.

Measuring vibration

In connection with raising axle weights, the effect of train size and especially heavy freight traffic on vibration has been investigated. On the basis of surveys and measurements commissioned by RHK, further studies of vibration will be conducted in a number of areas. The Vainikkala–Sköldvik and Vartius–Raahe line sections, which are important in eastern traffic, are among the most difficult line sections in this respect. A joint Nordic study regarding the setting of vibration limits and damping is also under way.

Tasks and activities

The Rail Administration Board directs and supervises RHK's activities. It decides on RHK's general operating lines, service and operational objectives, operational and financial plans, budget, the general arrangement of technical inspection, service pricing principles, the establishing and abolishing of permanent posts and the approval of collective bargaining agreements. It also approves significant plans concerning construction and maintenance of the rail network and traffic control and makes proposals concerning transport policy in the rail sector.

The Rail Administration Board met twelve times during the year. It also inspected track projects in the Kouvola region. The Rail Administration Board and RHK's Management Group held a joint development seminar in September.

Last year the Rail Administration Board dealt with the following far-reaching matters, among others: the tendering situation and the effects of competition, the need to renew the principles for track fees, the content of track maintenance, rail safety, RHK's environmental activities, the Rail Network 2020 project, the need for regulation and renewal of the Rail Network Act. During the autumn the Board discussed the development of RHK's activities, personnel resources and organization.

The Council of State appointed a new five-member Board for the period 2001–2003.

RHK's resources

RHK recorded 110 person-years of work in 2000, including 67 person-years in actual activities and 43 person-years in ticket inspection activities. The increase over the previous year was 3 person-years in actual activities and 2 person-years in ticket inspection activities. Personnel in actual activities take care of planning track maintenance and real estate services, ordering maintenance and contracting work and traffic control work, official tasks related to technical standards and licences, and RHK's financial and administrative tasks. Ticket inspection personnel are responsible for activities under public law.

RHK's wages and salaries together with related personnel expenses amounted to FIM 27 million. Personnel expenses make up about 1% of RHK's operational expenses.

Personnel participated in interviews concerning the development of activities. The organization and working methods which have been in effect over the past five years were evaluated critically. The point of departure in development work is to adapt work processes to the changing operating environment. Attention is also paid to factors influencing employees' abilities and welfare.

The average age of personnel at the end of the year was 40.7 years. The average age was 32.8 for inspectors and 45.8 in actual activities. Women made up 34% of personnel.

Available funds

Last year FIM 2,558 million in budget funds was available for RHK's gross expenses. This figure includes funds carried over from the previous year (FIM 97 million), regular and supplementary budget funds (FIM 2,029 million), itemized funds (FIM 430 million) and financing from EU structural funds through the Ministry of the Interior (FIM 2 million). Income also included direct building subsidies from the EU (FIM 26 million). The total was FIM 91 million less than the previous year. FIM 176 million was carried over to 2001.

Use of funds

Activities focused on planning and ordering construction and maintenance work. Orders declined during the year. RHK's gross expenses totalled FIM 2.38 million. Projects proceeded according to schedule. Spending was practically on budget. Funding for the line radio in the autumn supplementary budget (FIM 68 million) and direct subsidies from the EU (FIM 26 million) were carried over to the following year. FIM 82 million in funds for construction projects was carried over to the following year. This included funds for the Leppävaara line (FIM 25 million), development projects (FIM 20 million) and track maintenance (FIM 37 million).

The focusing of investments on track renewal for the third straight year is visible in improved track condition. Among performance indicators the length of track under speed restrictions and the rail network condition index reflect the result of work. At the beginning of the year 426 track-kilometres were under speed restrictions, at the end of the year 431 track-kilometres. The condition index as a four-year sliding average rose from 80% to 84.5% last year.

A total of FIM 2,379 million in budget funds was spent in 2000, plus FIM 2 million in EU structural funds. This was FIM 170 million or 7% less than the previous year. FIM 481 million was spent on development projects, FIM 5 million on land purchasing, FIM 904 million on basic infrastructure investments and FIM 989 on operational expenses. The biggest items were track maintenance and operation (FIM 665 million) and traffic control (FIM 205 million).

The biggest track renewal projects were on the line sections Helsinki–Tampere (FIM 116 million), Tampere–Orivesi–Jyväskylä (FIM 48 million), Kouvola–Pieksämäki (FIM 199 million), Kouvola–Kotka (FIM 45 million), Oulu-Tornio (FIM 57 million) Kuopio–Murtomäki (FIM 34 million), Lappeenranta–Parikkala (FIM 58 million) and Tampere passenger yard (FIM 47 million).

Among development investments FIM 127 million was spent on upgrading the Helsinki-Tampere line section. Electrification cost FIM 16 million between Turku and Toijala, FIM 30 million between Tuomioja and Raahe and FIM 4 million between Oulu and Rovaniemi. FIM 113 million was spent on automatic train protection and FIM 10 million on level crossing arrangements on main lines. Construction of the Helsinki–Leppävaara urban line proceeded according to plan and cost FIM 177 million.

Statemant of income and expenses

In the business accounts operational income includes fees, rents and other income. Operational income totalled FIM 434 million last year, with the largest item consisting of track fees (FIM 320 million), ticket inspection income (FIM 9 million), income from licence fees (FIM 1 million) and rents (FIM 56 million). Other income totalled FIM 47 million, including FIM 9 million from the sale of assets taken out of use and FIM 38 million in planning and building subsidies from the EU. FIM 12 million of direct subsidies from the EU were booked as state income and were not made available for track maintenance. Operational income fell by FIM 1 million or 0.7% compared with the previous year.

In RHK's accounts operational expenses include all costs with the exception of investment costs, which are booked with assets in the balance sheet. Operational expenses totalled FIM 2,183 million. The largest item was depreciation, which amounted to FIM 1,227 million. Track maintenance and

traffic control are outsourced, as are real estate maintenance services and expert and research services. These are the largest items booked under purchased services, which totalled FIM 917 million. Personnel expenses came to FIM 27 million. Rents and other expenses totalled FIM 11 million. The largest items in this category were property taxes, membership fees abroad, travel services, office rents and other rents. Operational expenses rose by FIM 60 million or 2.8% compared with the previous year.

The deficit before financial and extraordinary items came to FIM 1,749 million. Extraordinary income and expenses mainly consist of the costs of unexpected delays resulting from track damage and track work and related compensation. The deficit after financial and extraordinary items came to FIM 1,760 million. According to the Statement of Income and Expenses, income covered 20% of expenses, the same percentage as the previous year.

RHK booked FIM 14 million in VAT received and FIM 509 million in VAT paid. The deficit including VAT was FIM 2,225 million. This figure rose by FIM 28 million or 1% compared with the previous year.

Balance sheet

The balance sheet total was FIM 15,386 million, up FIM 177 million or 1% compared with the previous year. The capital value of fixed assets amounted to FIM 15,352 million at the end of the year. This value increased by FIM 177 million during the year. Investments totalled FIM 1,414 million, of which replacement investments in the rail network amounted to FIM 904 million. Sales and transfers of assets totalled FIM 3 million. Advance payments fell by FIM 8 million. Depreciation according to plan totalled FIM 1,226 million. Depreciation for destroyed buildings amounted to FIM 1 million.

Increases in rail structures totalled FIM 1,382 million, of which development investments and advance payments amounted to FIM 479 million. Basic renewal totalled FIM 903 million, which was FIM 305 million less than depreciation on the rail network. Annual replacement investments should be least FIM 1,600 million so that the value of fixed assets can be increased to about FIM 19,000 million. This is the level necessary for the rail network to be in the condition required by traffic.

Cost covering

According to a decision by the Ministry of Transport and Communications, RHK charges fees for issuing different types of licences, decisions and technical specifications. It is also responsible for certain real estate activities and ticket inspection activities. Under separate legislation RHK collects track fees, which are set so as to provide a cost structure which is comparable to other modes of transport.

Income from fees totalled FIM 64.6 million, including FIM 9.4 million from ticket inspection and the issuing of licences and decisions. The costs of such statutory performances were covered by income. Income from the issuing of non-statutory licences and decisions amounted to FIM 0.7 million and yielded FIM 0.1 million.

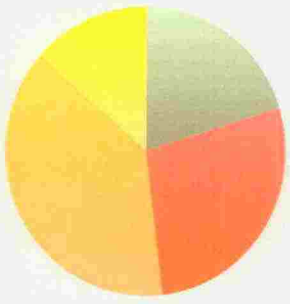
RHK's real estate activities are the most significant function subject to charges and based on commercial principles. Rent income totalled FIM 55.7 million, including FIM 54.5 million from real estate rentals. Other income from real estate amounted to FIM 0.9 million. This brought total income from real estate to FIM 55.4 million, down 15.3% from the previous year. This drop was due to the transfer of holdings to the Ministry of Finance and the Ministry of Agriculture and Forestry and the further reduction of parking lots, as a result of which income from land rentals fell by 22.1% compared with the previous year. Managing land areas is the most profitable real estate activity, so this has a large effect on the result.

Separate expenses from real estate activities totalled FIM 41.9 million, down 20%. The biggest item, repair and maintenance expenses, amounted to FIM 36.7 million, down 17.9%. Other expenses also declined. The tax paid on real estate income has fallen from year to year. Tax refunds from previous years exceeded the amount of tax paid during the year.

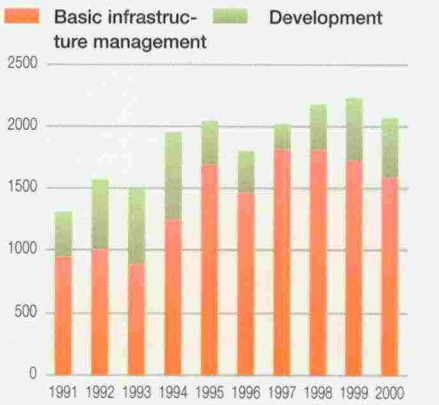
The decline in separate expenses is due to greater efficiency and the separation of facilities in RHK's own use from paid activities. Real estate holdings are divided into housing, other buildings and land areas. FIM 2.6 million or 8% was subtracted from expenses for other buildings to cover facilities in RHK's own use. Without this correction the operational deficit would be FIM 0.1 million. After the correction the calculation gives a better picture of real estate activities than in previous years.

The capital value of income-producing real estate was FIM 401 million. The operational surplus after separate expenses and social costs was FIM 12.2 million, so the return on invested capital was 3%. Depreciation on real estate totalled FIM 14.4 million. The operational deficit after depreciation was FIM 2 million, leaving a return of -0.6%. According to State Treasury guidelines the nominal interest requirement in calculating cost covering was 3.9% on invested capital. Interest expenses totalled FIM 15.6 mil-

Breakdown of expenditure on infrastructure in 2000

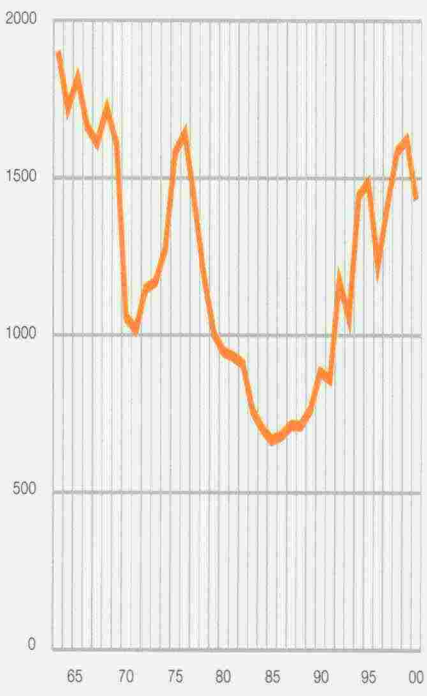


Expenditure on the rail network 1990-2000, FIM million



Investments in the rail network in 1963-2000, FIM million

(At fixed 2000 prices)



lion. The operational deficit on real estate activities was FIM 17.9 million, leaving a return of -4.4% on invested capital. RHK's real estate holdings did not produce the required return.

The Ministry of Transport and Communications has noted that RHK's real estate activities do not have possibilities to achieve profitability. The objective is for the surplus after separate costs to be at least 30% of expenses. This objective was achieved.

Increasing income from real estate activities is difficult because of the age, condition and location of buildings. Income from real estate activities has annually covered 70% of expenses calculated according to the state's return requirements. Two-thirds of rents come from buildings linked to rail traffic, whose rent has been set on a commercial basis, taking into account the level and purpose of facilities. Apartment rents account for 15% of income. The location and level of apartment buildings do not allow higher rents. Income from land areas accounts for 25% of total income and covers all costs, including interest.

Costs by task

A calculation of RHK's costs by task is presented on page 26. Activities have been divided into network management and paid activities. Costs include separate costs and administrative costs. Total costs came to FIM 2.8 billion.

Paid activities accounted for 3% of total costs.

The calculation also includes administrative costs of investments, since these are not included in the balance sheet. They account for about half of total administrative costs.

Network management consists of traffic control, track maintenance and operation, and planning and research activities.

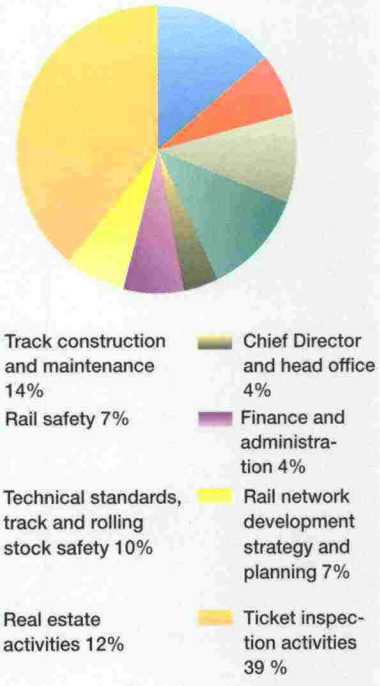
Traffic control, which ensures safe operations on the rail network, is presented as a separate activity. Traffic control is outsourced.

The main task in network management is track maintenance and operation, which includes maintaining track and equipment, operating costs such as electricity for lighting and switch heating, and track facility costs. Network management costs amounted to FIM 2.5 billion. This was 3% less than the previous year. The drop was due entirely to lower interest rates, according to the effective interest rate set by the State Treasury, which varies each year. The interest rate fell by one point compared with the previous year. Costs excluding capital costs rose by 3%. This is due to the shifting of track facility costs to track maintenance, a rise in the cost level and an increase in equipment for which track maintenance is responsible. Growth in productivity for actual track maintenance before taking into account the rise in the cost level lowered the separate costs of basic infrastructure management by 5% compared with the previous year.

Planning and research includes strategic plans, project plans, technical research and technical specifications. These activities are minor in scale but account for a third of the administrative costs of network management. This is because RHK's own personnel participate in planning and research work. Two-thirds of planning is purchased as services.

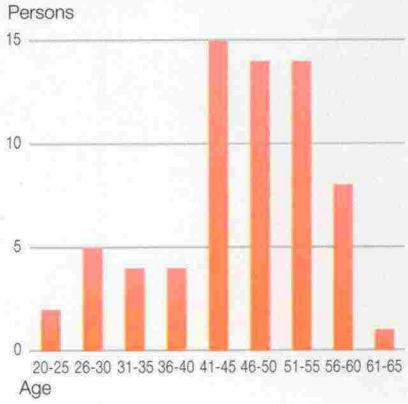
Operating and joint costs account for one-third of network management costs. Two-thirds is capital costs. Depreciation in turn accounts for two-thirds of capital costs. Network management costs are about FIM 300 million higher than annual gross expenses for infrastructure management.

Person-years by type of activity in 2000

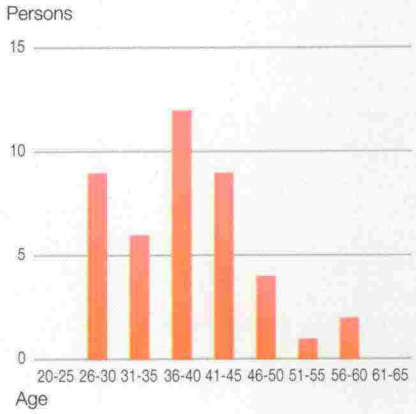


Age breakdown of employees

Persons employed in actual activities



Persons employed in ticket inspection activities



STATEMENT OF INCOME AND EXPENSES

FIM 1,000		1.1.–31.12.2000		1.1.–31.12.1999
OPERATIONAL INCOME				
Fees	330,763		325,375	
Rents and user charges	55,696		64,995	
Other operational income	47,201	433,660	47,108	437,478
OPERATIONAL EXPENSES				
Materials, supplies and goods				
Purchases during the year	- 444		- 526	
Personal expenses	- 27,267		- 25,420	
Rents	- 4,032		- 3,042	
Purchased services	- 916,858		- 906,641	
Other expenses	- 7,217		- 7,008	
Production for own use	0		0	
Depreciation	- 1,227,313	- 2,183,131	- 1,180,249	- 2,122,886
DEFICIT I		**- 1,749,471**		- 1,685,408
FINANCIAL INCOME AND EXPENSES				
Financial income	731		444	
Financial expenses	- 338	393	- 409	35
EXTRAORDINARY INCOME AND EXPENSES				
Extraordinary income	6,063		9,603	
Extraordinary expenses	- 16,830	- 10,767	- 22,224	- 12,621
DEFICIT II		**- 1,759,845**		- 1,697,994
INCOME FROM TAXES AND OTHER COMPULSORY CHARGES				
VAT received	13,718		18,295	
VAT paid	- 508,868	- 495,150	- 547,244	- 528,949
DEFICIT FOR THE YEAR		**- 2,254,995**		- 2,226,943

BALANCE SHEET 31.12.2000

FIM 1,000	2000		1999	
ASSETS				
FIXED ASSETS				
Intangible assets				
Intangible rights	226	226	615	615
Tangible assets				
Land and water areas	26,801		26 801	
Building land and water areas	483,321		476,181	
Buildings	245,175		246,673	
Structures	13,214,415		13,345,856	
Machinery and equipment	5,362		7,113	
Furnishing	50		433	
Advances and projects in progress	1,376,566	15,351,690	1,071,840	15,174,897
INVENTORIES AND FINANCIAL ASSETS				
Current receivables				
Accounts receivable	30,751		25,374	
Other current receivable	4,183		8,347	
Advance payments	0	34,934	1	33,722
TOTAL ASSETS		**15,386,850**		15,209,234
EQUITY AND LIABILITIES				
EQUITY				
State's equity				
State's equity at 1.1.1998	14,097,454		14,097,454	
Change in equity in previous years	726,264		467,635	
Equity transfers	2,465,950		2,485,572	
Deficit for the year	- 2,254,994	15,034,674	- 2,226,943	14,823,718
LIABILITIES				
Current liabilities				
Advance payments	151		375	
Accounts payable	346,913		380,332	
Inter-agency transfers	634		650	
Payable items	491		458	
Accrued expenses	3,987		3,701	
Other current liabilities	0	352,176	0	385,516
TOTAL EQUITY AND LIABILITIES		**15,386,850**		15,209,234

THE FINNISH RAIL ADMINISTRATION'S FIXED ASSETS 31.12.2000

FIM 1,000 TYPE OF ASSET	Capital value 1.1.2000	Reductions	Increases	Depreciation	Capital value 31.12.2000
INTANGIBLE ASSETS					
Purchased computer programmes	615			388	227
Total intangible assets	**615**	**0**	**0**	**388**	**227**
TANGIBLE ASSETS					
Gravel and other aggregate areas	26,801				26,801
Building land	267,951	892	4,234		271,293
Railway beds	208,231	1,567	5,364		212,028
Housing	24,979	20	1,062	1,582	24,439
Other buildings	221,694	240	13,214	13,933	220,735
Buildings in progress	2,335		8,096		10,431
Total real estate	**751,991**	**2,719**	**31,970**	**15,515**	**765,727**
Railway substructure	4,855,430		25,956	285,205	4,596,181
Railway superstructure, bridges	6,164,984		717,109	730,569	6,151,524
Control and safety equipment	1,184,398		166,872	107,745	1,243,525
Fixed electrification equipment	997,283		152,359	73,433	1,076,209
Power current equipment	143,761		15,132	11,917	146,976
Advances	34,677	7,678			26,999
Railway structure in progress	1,034,827		304,309		1,339,136
Total railway structures	**14,415,360**	**7,678**	**1,381,737**	**1,208,869**	**14,580,550**
Computer hardware	260		85	292	53
Office machines	29		7	21	15
Traffic control communications	6,824		191	1,838	5,177
Audiovisual equipment	0		125	8	117
Furnishing	433		0	383	50
Total machinery, equipment and furnishing	7,546	0	408	2,542	5,412
TOTAL FIXED ASSETS	15,175,512	10,397	1,414,115	1,227,314	15,351,916

DEPRECIATION ACCORDING TO PLAN

RHK's depreciation rate and economic life

Type of asset	Economic life in years	Straight-line depreciation %
Purchased computer programmes	5	20.00
Gravel and other aggregate areas		-
Building land		-
Railway beds		-
Housing	50	2.00
Other buildings	40	2.50
Railway substructure	60	1.67
Railway superstructure, bridges	30	3.33

Type of asset	Economic life in years	Straight-line depreciation %
Control and safety equipment	20	5.00
Fixed electrification equipment	30	3.33
Power current equipment	30	3.33
Computer hardware	3	33.33
Office machines	5	20.00
Traffic control communications equipment	10	10.00
Office furnishing	5	20.00

USE OF BUDGET FUNDS

FINNISH RAIL ADMINISTRATION
INCOME AND EXPENSES IN 1996–2000

FIM million	1996	1997	1998	1999	2000
BASIC INFRASTRUCTURE MANAGEMENT	**1,424**	**1,688**	**1,659**	**1,599**	**1,464**
Income	**302**	**402**	**441**	**434**	**429**
Track fees	200	300	319	316	320
Income from real estate activities	70	70	66	65	55
Other income	32	32	56	53	54
Expenses	**1,726**	**2,090**	**2,100**	**2,033**	**1,893**
Administration	28	31	33	35	38
Traffic control	194	200	210	207	205
Real estate maintenance and repairs	40	45	49	67	63
Track maintenance and use	660	671	652	652	665
Planning and research	19	27	18	18	18
Replacement investments	785	1,116	1,138	1,054	904
RADIO NETWORK					0
DEVELOPMENT OF THE RAIL NETWORK	**340**	**207**	**304**	**273**	**304**
HELSINKI–LEPPÄVAARA LINE		**2**	**83**	**235**	**177**
RAIL NETWORK LAND AREAS	**2**	**1**	**3**	**8**	**5**
RHK'S GROSS EXPENSES	**2,068**	**2,300**	**2,490**	**2,549**	**2,379**
RHK'S NET EXPENSES	**1,766**	**1,898**	**2,049**	**2,115**	**1,950**

COSTS BY TASK IN 2000

FIM 1,000	Operational cots	Depreciation	Interest 3.9 %	Total costs	Change % 2000/1999
NETWORK MANAGEMENT	**906,272**	**1,212,217**	**573,834**	**2,692,323**	**- 2**
Traffic control	204,990	1,851	233	207,074	- 1
Track maintenence, operation and facilities	678,956	1,210,256	573,601	2,462,813	- 3
Planning and research	22,326	110	0	22,436	- 4
PAID ACTIVITIES	**53,230**	**14,400**	**15,625**	**83,255**	**- 19**
Real estate management	43,236	14,400	15,625	73,261	- 22
Other business	618	0	0	618	- 17
Official tasks	9,376	0	0	9,376	16
ADMINISTRATIVE COSTS OF INVESTEMENTS	**13,896**	**0**	**0**	**13,896**	**22**
TOTAL COSTS	**973,398**	**1,226,617**	**589,459**	**2,789,474**	**- 3**

FACTS ABOUT FINLAND'S RAIL NETWORK

31 December 2000

First line: Helsinki–Hämeenlinna, 1862
Gauge: 1,524 mm
Total length of railway lines: 5,854 km
Total track length including sidings: 8,705 km
Lines with two or more tracks: 507 km
Tracks with concrete sleepers: 2,827 km
Sleepers/km: 1,640
Long-welded tracks: 4,245 km
Type of new rails on main lines: 60E1 (weight 60 kg/m)
Electrified line: 2,372 km
Electrification system: 25 kV 50 Hz
Block-protected line: 2,272 km
Centrally controlled line: 2,152 km
Tunnels: 42
Total length of tunnels: 25,284 m
Railway bridges: 2,116
Bridges over railway line: 811
Number of level crossings: 4,227, including 3,521 on main lines
Land owned by the Finnish Rail Administration: 28,000 ha
Buildings owned by the Finnish Rail Administration: 2,833
with a total volume of 1.4 million m^3

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Photos: Markku Nummelin, Risto Laine
Layout and DTP production: Inclus Communications Oy
Printed by Libris Oy, Helsinki 2001

441 014
Printed matter